

Claims

What is claimed is:

- 5
Sub AI
1. A system for removing a defective server from a server pool comprising:
 - a first server associated with a first buddy server and a second buddy server, the first server being operative to transmit a first ping signal to the first buddy server and to transmit a second ping signal to the second buddy server and to receive a first responsive signal from the first buddy server and to receive a second responsive signal from the second buddy server;
 - a server database operative to maintain the association between the first server and the first buddy server and to maintain the association between the first server and the second buddy server;
 - wherein the first server is further operative to send a first server down signal to the server database, in response to a determination that the first buddy server is down; and
 - wherein the server database is further operative to associate the first server with a third buddy server in response to the receipt of the first server down signal.
 2. The system recited in Claim 1, wherein the first server is further operative to send a second server down signal to the server database, in response to a determination that the second buddy server is down and wherein the server database is further operative to associate the first server with a fourth buddy server in response to the receipt of the second server down signal.
 3. The system recited in Claim 1, wherein the first ping signal comprises an ICMP ping signal and wherein the second ping signal comprises an ICMP ping signal.
 4. The system recited in Claim 1, wherein the server database comprises a SQL database maintained on a SQL server.
 5. The system recited in Claim 1, wherein the server database maintains a list of active servers comprising the first server, the first buddy server and the second buddy server, and wherein, in response to the first server down signal, the server database is further operative to remove the first buddy server from the list

of active servers.

6. The system recited in Claim 5, further comprising a client connected to the server database and wherein the list of active servers is used to connect the client to one of the servers in the list of active servers.
- 5

002290 04620960

7. A computer-implemented method for creating a virtual server ring, the method comprising the step of:

storing an entry in a server table identifying a plurality of servers in a server pool, wherein each entry comprises a server identification, a first server buddy and a second server buddy.

8. The method of Claim 7, further comprising the steps of:

adding a new server to the virtual server ring by randomly choosing one of the plurality of servers and the randomly chosen server's first server buddy;

reassigning the new server as the randomly chosen server's first server buddy; and

reassigning the new server as either the first server buddy or second server buddy of the randomly chosen server's first server buddy.

9. The method of Claim 7, further comprising the step of:

causing at least one of the plurality of servers to monitor its first server buddy and its second server buddy to determine whether one of its buddies is down.

10. The method of Claim 9, further comprising the steps of:

when the monitoring server determines that one of its buddies is down, reporting the identity of the down server to the server table.

11. The method of Claim 10, further comprising the steps of:

causing a routing server, wherein the routing server is responsible for routing a client to the virtual server ring, to no longer route the client to the down server.

12. The method of Claim 11, wherein the step of causing the routing server to no longer route the client to the down server comprises the step of removing the down server from the server table.

13. The method of Claim 7, further comprising storing a buddy list at each of the plurality of servers, wherein the buddy list comprises the server's first server buddy and the server's second server buddy.

14. The method of Claim 9, wherein the step of causing at least one of

the plurality of servers to monitor its first server buddy and its second server buddy to determine whether one of its buddies is down comprises sending an ICMP ping signal to the first server buddy and to the second server buddy.

5 15. The method of Claim 7, further comprising the steps of:
if one of the plurality of servers in the server pool shuts down normally, then causing the normally shutdown server to report its identity to the server table and removing the normally shutdown server from the server table.

10 16. The method of Claim 15, further comprising the steps of:
reassigning the normally shutdown server's first server buddy and second server buddy to be buddies to one another.

ADD A2

005250 04520950

5

10

15

if one of the plurality of servers determines that one of its buddies is down, then causing the monitoring server to notify a central repository that one of its buddies is down.

15

removing the down buddy server from the central repository when notification is received that the buddy server is down.

19. The method of Claim 18, further comprising the step of reassigning the down server's other buddy to be buddies with the monitoring server.